

What is claimed is:

1. A rotary-type knife blade apparatus comprising:
 - (a) a knife roller;
 - (b) a cooperating anvil roller having an anvil on its periphery against which a traveling web of material is cut, said knife roller and said anvil roller being rotatable about parallel longitudinal axes in timed relationship to the travel of the traveling material therebetween;
 - (c) at least one knife carrying unit mounted on the periphery of said knife roller, said knife carrying unit comprising:
 - (1) a knife holder;
 - (2) at least one shaped slot formed in the radially outwardly presented surface of said knife holder, said shaped slot having a circumferentially extending component; and
 - (3) at least one shaped cutting knife capable of being carried within said shaped slot of said knife holder and having at least one radially outwardly presented cutting edge for engagement with said anvil to cut the traveling web material.

2. The apparatus of claim 1, wherein said knife holder is formed of a resilient elastomeric material having sufficient resiliency to accommodate radial force imposed upon said knife blade.

3. The apparatus of claim 2, wherein said shaped knife conforms radially and circumferentially to said knife roller.

4. The apparatus of claim 2, wherein said knife carrying unit is movable around the circumference of said knife roller.

5. The apparatus of claim 2, wherein said knife holder is formed of a resilient elastomeric material having a Shore D hardness of about 70-80.

6. The apparatus of claim 2, wherein said knife holder comprises a urethane polymer.

7. The apparatus of claim 1, wherein said knife holder additionally has a plurality of slots formed in the radially outwardly presented surface of said knife holder, at least one of said slots being said shaped slot, said shaped slot being offset circumferentially from the longitudinal center axis of the knife holder, and another one of said slots extending linearly

along the longitudinal center axis of said knife holder, each of said slots capable of carrying a knife blade.

8 The apparatus of claim 7 wherein said linearly extending slot has a blade comprising a plurality of spaced, outwardly radially presented tines, said tines capable of piercing and removing web chips.

9. The apparatus of claim 1, wherein said linearly extending slot has a perforating blade.

10. The apparatus of claim 1, wherein said cutting edge is uneven.

11. The apparatus of claim 1, wherein said knife blade is made of steel.

12. The apparatus of claim 1, wherein at least one shaped cutting knife is configured to cut a contoured edge into the traveling web material.

13. The method of claim 1, wherein at least one shaped cutting knife is configured to cut patterns into the traveling web material.

14. The apparatus of claim 1 wherein, said traveling web material is formed of a material selected from the group consisting of paper,

foil, and plastic.

15. The apparatus of claim 1, wherein said traveling web material is a combined layer of at least two materials.

16. The apparatus of claim 1, wherein the diameter of said knife roller assembly is less than the diameter of said anvil roller assembly to create a wiping action of said cutting edge against said anvil.

17. In a rotary-type papercutting apparatus having a knife roller, a cooperating anvil roller against which the paper is cut, and a knife holder formed of a resilient elastomeric material, the improvement which compromises:

- (a) at least one knife carrying unit mounted on the periphery of said knife roller, said knife carrying unit comprising:
 - (1) a knife holder formed of a resilient elastomeric material with sufficient resiliency to accommodate at least one directional force;
 - (2) at least one shaped slot formed in the radially outwardly presented surface of said knife holder, said shaped slot having a circumferentially extending component

- (3) at least one shaped cutting knife capable of being carried within said shaped slot of said knife holder and having at least one radially outwardly presented cutting edge for engagement with said anvil to cut the paper, said shaped or curved knife capable of conforming to the contour of the knife roller; and
- (b) a retention mechanism for retaining said knife holder on the periphery of said knife roller comprising at least one retaining member and a fastener passing through said retaining member and into receptacles within said knife roller.

18. A method for cutting a traveling web of material, comprising the steps of:

- (a) passing a web of material between a rotatable knife roller and a cooperating anvil roller, said knife roller comprising at least one knife carrying unit mounted on the periphery of said knife roller;
- (b) rotating said knife roller and said anvil roller upon parallel axes so that a knife carrying unit approaches said traveling web of material;
- (c) engaging said traveling web of material with at least one shaped cutting knife

having a circumferentially extending component, said shaped knife mounted on said knife carrying unit in an elastomeric knife holder;

- (d) cutting the traveling web of material with at least one radially outwardly presented cutting edge of said shaped cutting knife; and
- (e) continuing to rotate said knife roller and said anvil roller so that at least one shaped cutting knife engages the paper along the entire circumferential component of said shaped cutting knife, said elastomeric knife holder yielding within its elastic limits during the cutting operation to take up displacement of said cutting knife by said anvil roller and to allow said cutting knife to settle into its cutting position within said roller.

19. The method of claim 18, wherein at least one shaped cutting knife cuts a contoured edge into the traveling web of material.

20. The method of claim 18, wherein at least one shaped cutting knife cuts patterns or shapes into the traveling web of material.